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A
TREATISE
OF
Hemp-Huſbandry;

Being a Collection of approved Inſtructions, as to the Choice and Preparation of the Soils, moſt proper for the *Growth* of that uſeful and valuable material, and alſo as to the ſubſequent Management thereof, agreable to the Experience of ſeveral Countries wherein it has been produced, both in *Europe* and *America*.

With ſome introductory Obſervations, upon the Neceſſity which the *American Britiſh* Colonies are under, generally to engage in the ſaid Production; and upon the extenſive Uſefulneſs, and great Utility of the ſaid material.

By EDMUND QUINCY, Eſq;

Merchant of
Boston

Lucem redde tuae--------Patriae. Hor.

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MDCCLXV.

Advertiſement.

THE Publiſher of the following ſheets aſſumes little more to himſelf, than being a collector of the beſt experiments and obſervations he could meet with, from *Europe*, and in *America*, relative to the growth and management of *Hemp*; which he at firſt propoſed to convey to the Public, through the channel of a news-paper: but at the deſire of ſome of the honorable Members of the General Aſſembly, was induced to publiſh them in the preſent form, that a number of the copies might, at the public expence, and under it's ſanction, be diſperſed into the ſeveral towns and diſtricts of this province; by which means, it is hoped, they may be preſerved from the like meaſure of neglect, which the ſubject itſelf, and that of huſbandry in general, has been too long under, to the great diſadvantage of theſe otherwiſe happy *Colonies*.

BRITISH MUSEUM

INTRODUCTION.

BY means of the many civil and politic Privileges, enjoyed by the *North-America Britiſh*-Colonies, very ſurprizing *Additions* have been made to the Commerce, Riches and Strength of the *Britiſh* Empire; and the peculiar Encouragement reſulting from thoſe Privileges, the various happy Climates, and fruitful Soils, affords reaſon to think, much *greater* may be expected.

Through the fertility of their lands, and the abundance of the adjacent Seas and Rivers, the ſaid Colonies have (by the Bleſſing of Providence) been enabled to furniſh themſelves with the *internal ſupports of life*; and by their commercial improvement of the effects and productions of Sea and Land, acquired through their labour and induſtry, they have for the moſt part been provided with the *external* alſo.---But the preſent great increaſe of Inhabitants, and their neceſſary ſupplies, far exceeding their commercial advantages, (on which they have too much dependance) they are rendered proportionably leſs capable of making remittances to their Mother-Country, for the many articles of cloathing, and other commodities, which they have heretofore imported in large quantities; and ſtill are, and muſt continue to be, in want of, unleſs they can furniſh themſelves with part of them, by a ſkilful and diligent improvement of their richSoils, in producing ſuch *materials*,as may in part ſerve for their cloathing, and a ſupply for a Navigation which a country full of good *Timber* and *Iron* oar,naturally points out to the Inhabitants, their capacity of extending very largely, to the reciprocal benefit of their mother-country and themſelves; as they will thereby be enabled to take from, and pay her for, much greater quantities of *her ſtaple commodities*, and various other manufactures.

This being the caſe, it is preſumed none will be at a loſs to determine, that the two important materials which the Inhabitants of theſe Colonies ſhould be principally encouraged in the growth of, are *Flax* and *Hemp*, being the moſt extenſively uſeful of any which can be ſo eaſily and generally produced in *North-America*; and ſuch as *Great-Britain* and *Ireland* have always been,and continue to be,at a vaſt annual expence,chiefly in*Caſh*,to procure fromForeigners, (beſides all they can raiſe themſelves) in order to provide linnens for their own Conſumption, and Export, and cordage and canvaſs for the RoyalNavy, and the growing navigation of thoſe kingdoms; and therefore ſuch, as above all other, we may expect, that a Bounty, upon application would be granted by Parliament, upon the *one*, and that already granted upon the other, increaſed, for the encouragement of their importation, if there was ſufficient reaſon to expect a full ſupply would be the Effect of thoſeBounties. This indeed would not be burthenſome to *Great-Britain*, as the whole of what might be imported, would be paid for by the labour of her own people, and whatever advantage *her* colonies might receive from ſuch Bounties, would finally center with *her*.---Theſe weighty conſiderations with many other which are very obvious, will neceſſarily excite all who have a regard to the intereſt of the Mother-Country, as well as the peculiar benefit of theſe Colonies, to promote the growth of the ſaid Commodities, to the utmoſt of their ability and influence.

It is indeed matter of reproach, to the Farmers in moſt of the Colonies, and much to be regretted, that the importation of Hemp into *America*, has not already annually decreaſed: but with good reaſon it may be expected that the ſucceſsful trials in this branch of huſbandry which have been of late made in ſeveral of the more Northern Colonies, will make it evident, that all the Colonies are able to extend it with advantage, near equal to thoſe far diſtant Regions, from whence our uſual ſupplies have been derived, at ſecond or third hand, with an accumulated charge of double freight, duty, Commiſſions, Inſurance, &c.

Here we would obſerve, that in the remote part of the Ruſſian Empire, the Farmer doth afford his Hemp at ſo cheap a rate as to allow of a *Tranſportation*, of many hundred miles by land to *Riga*, *Peterſburg*, *Archangel* and other ports, and from thence (after duties and other charges paid) ſome hundred leagues to *Great-Britain*; and with an addition of charge, from thence, of not leſs than 1000 leagues to *America*. This being duly conſidered by the *American* Farmers, who are generally upon a much better ſoil, and in a much happier Climate, will be a means of convincing them that notwithſtanding the ſuppoſed difference in the price of labor, they may produce Hemp with profit, ſince it may be tranſported to market with a light charge, free of duty, and vendable for Caſh, at more than ſeven times the price it coſt at the place of it's growth in *Ruſſia*. Should it be ſaid, the *Ruſſian* Farmer gets but little for his labour, yet it is to be preſumed the *American* muſt grow rich by *his*; and it is expected with good reaſon, that a few years experience will convince them hereof. That we may contribute as much as may be, to this happy event, we ſhall ſay ſomething of the nature of Hemp, the extent of its uſefulneſs and great utility, and add ſuch inſtructions as we have been able to collect, relative to its culture and improvement.

As to the culture of Flax, it having been for many years practiſed in moſt of the Colonies, and in many parts ſo well underſtood, it will be thought needleſs to ſwell the preſent Treatiſe with any directions upon that article: but we would earneſtly recommend to the Farmer, a ſteady improvement of ſome part of his ſuitable ſoils therein, being of ſo great uſe and importance to ourſelves, and rather tending to promote than thwart the intereſt of our mother country, for the reaſons already aſſigned.

Of Hemp in general, and its uſefulneſs.

FEW perſons are ignorant, that Hemp is a large, tall and buſhy plant, of a rough aſpect and irregular growth, but upright and firm. In Flax (as in moſt plants) the male duſt, and female embrio are lodged in the ſame flower; but in Hemp (as in Hops) the male duſt is contained in ſmall flowers, and is found only in ſome plant, and the female embrio on the other ; and hence the diſtinction of this extraordinary plant into ſexes: the Huſbandman obſerving that from the ſame quantity of ſeed proceeded two ſorts of plants, though alike in leaves and ſtalks, the one bearing ſmall duſty flowers and no ſeeds, the other producing ſeeds without any obvious flowers, has diſtinguiſhed them by the names of male and female, or fimble and carl Hemp as called by ſome. The male is the lighter, ſmaller and more delicate plant, has fewer branches, tenderer and more hollow than the female, which bears the ſeed as before-mentioned.

The male comes to its ripeneſs ſome weeks ſooner than the female and yields the fineſt thread, and ſo moſt fit for linnens of various ſorts : among the *Dutch* it has been always moſtly uſed in the manufacture of their canvaſs or ſail-cloth : in *France* and ſeveral parts of its dominions great quantities of ſail-cloth, alſo ſheeting and ſhirting linnen, of the latter even the very fineſt ſorts are conſtantly made of it, and much worn as it proves remarkably ſtrong, though not ſo eaſily brought to a good colour as thoſe made of Flax : we are alſo told that in *Flanders*, *Scotland*, *Ireland* and ſome other countries the fineſt threads and lawns are likewiſe manufactured from the male or fimble Hemp : alſo in *England*, where but little Hemp is produced, the male kind furniſhes the Inhabitants in ſome counties, in part, if not wholly with their bed-thicks, ſackings, cod and other fiſhing lines, net twine, girt-whip and many other uſeful articles, in which the ſtrength and durableneſs are eſpecially regarded.

The female Hemp is more robuſt, the ſtalk thicker and more branched, of a ranker and coarſer ſort, though very ſtrong and durable, and by the *Dutch*, chiefly applied to the manufacture of cables, and cordage of all ſorts : It is generally ſuppoſed, and I think with much reaſon, that one *Britiſh* ſubject in *North-America*, employed in the production of Hemp and Flax may furniſh employment in the coarſer branches of the manufacture (as of cordage, canvaſs, &c.) for at leaſt three ſubjects in *Great-Britain*, and in the finer branches, of threads, lace, cambricks, lawns, ſhirting, ſheeting, diaper and damaſk, linnen, &c. for three times that number.

Of the culture and improvement of Hemp.

HEMP is ſaid to depend more upon the nature of the ſoil than almoſt any other plant whatſoever : for which reaſon the Huſbandman is adviſed if he would depend upon a good crop,to prepare for it a rich, light, loamy ſoil, in caſe ſuch is in his poſſeſſion. In each Colony of *America* there are doubtleſs many thouſand acres of ſuch lands. Beſides thoſe called intervals (many of which are eſteemed the beſt) we have much of the dark, loamy ſoils, compounded of ſand and pure mould, in which it is obſerved that Hemp (as well as Flax) greatly delights : the moſt unfit are, cold ſtiff clays, and deep, black and low grounds, which have not been as yet, well ditched and dreined †, in order to render them warm and light ; in ſuch ſoils, though never ſo rich, Hemp will not thrive, becauſe they are tough, wet and cold, and obſtruct the roots which are apt to ſpread in a proper ſoil well cultivated. Warm land is ſo eſſential to the growth of Hemp, that it will thrive better in poor warm land, than in a rich cold ſoil.‡ An author of credit in Great-Britain obſerves, that he had ſeen, a very large crop raiſed from a peice of wood land, after ſtubbing up the roots; the ſoil being a good deep loam, which had lain under wood for many years, being well dreſſed by a through tillage without dung, which he ſays, ſeems to be generally condemned, as improper manure for Hemp lands. The foregoing obſervation affords much encouragement to thoſe Farmers, who are ſetting down upon new lands of a rich, free, loamy kind, being cleared of all encumbrances, and by a ſuitable tillage, brought into a light, mellow and warm ſtate, that they may probably reap five times more profit from an acre of ſuch new land, properly ſowed with good Hemp ſeed, than they might expect from the ſame, ſowed or planted with any ſort of *Engliſh* or Indian grain; though generally from ſuch lands, the beſt and largeſt crops of the *former* are to be depended on.

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† In *Pennſylvania* for many years paſt, the Farmers have raiſed Hemp to advantage on their well dreined low grounds.

Thoſe perſons who are beſt acquainted with the American Hemp huſbandry, aſſure the Farmer, that an acre of good land, well tilled, will produce ten hundred of Hemp, (fit for a market), which at a middle price muſt yield the farmer, ſeventy dollars, excluſive of the value

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† It is very probable, from experiments which have been made, by the ſettlers upon Merrimack, Connecticut, Hudſons, and other large Rivers, both eaſtward and weſtward, with many of their principal branches, that their bordering rich intervals will afford encouragement in the growth of Hemp, as well as Flax, near equal to the ſoils upon the river *Nile* in *Egypt*, from whence many of the cities of the Turkiſh empire and Italy, receive great part of their ſupply of both Hemp and Flax.

‡ Some late experiments in the Maſſachuſetts and Connecticut, have proved that a light and dry ſoil, of indifferent ſtrength, in the drill, and hoe method of cultivation, are capable of producing very profitable crops of Hemp.

of the ſeed: in time of war, 100 dollars, and frequently more; as the merchant and rope-maker payed, during the late war, for Ruſſia Hemp, of which, as we have not always, if ever, the beſt ſtaple, it is juſtly eſtimated in general inferiour to what may be produced in all or moſt of theſe colonies.

This muſt ſurely ſerve to fix the Farmer's reſolution to do his utmoſt in preparing a proper ſoil for the production of ſo valuable a commodity, at leaſt to make trial, if only of a quarter of an acre, either in the ordinary way of ſowing by hand, or in the drill plow method.

If the Farmer propoſes to ſow his ſeed by hand, which has been the uſual, though by no means, the beſt and moſt profitable method, (as we ſhall endeavour to ſhew him), if he has not any land which has been under fallow at leaſt one year, having had ſeveral intermediate plowings in order to open and enrich it; let him, as ſoon as the froſt will permit, plow the aſſigned piece of land, (already in tillage) three or four times, and harrow it as often with an iron harrow, after each plowing, unto that time in the ſpring in which he may judge it convenient to ſow his ſeed: always obſerving that the earlier, the better, in caſe his ground be reduced to a good tilth, which by frequent plowing and harrowing it may be, and the mould rendered as fine, as it is uſually made for onions in a garden. The laſt time the ground muſt be plowed in ridges of about ſix feet wide, flat and even on the top as they can be laid, with a ſmall interval between each ridge, ſufficient for the pullers to paſs, when the male Hemp is ready for pulling.

The reaſon why the ridges are to be made thus narrow, is for the more convenient pulling of the *male* Hemp, which is always pulled ſeveral weeks before the *female*, as has been ſaid: being ſowed in ridges you are enabled to pull the *former*, without bruiſing or otherwiſe damaging the latter, which is very prejudicial to the crop.

Of ſowing of Hemp.

THE moſt proper time for ſowing the ſeed cannot be fixed, as not only the climate, but even the ſcituation of the plantation, wherein it is to be ſowed, is to be conſidered; whether it be high and warm land, or more low and expoſed to wet if ſowed too early: Some Hemp-Growers in the Maſſachuſetts, have for the moſt part ſowed about the ſame time they planted their Indian Corn; others are of opinion, that as early in the ſpring, as the ground can be got ready, is moſt adviſeable, and this will be much earlier in ſome of the colonies, than in others. Hemp is of quick growth, and may ſeaſonably arrive at maturity, tho' not ſowed 'till the middle of May: * the preciſe time of ſowing I chuſe therefore to leave to the determination of the Farmer. But however he may judge as to the ſeaſon, let him be very cautious as to the goodneſs of the ſeed: an impoſition muſt render fruitleſs the labour of the year. He is therefore to chuſe ſuch ſeed (of the laſt year's growth only), as appears freſh, firm, and bright, to be proved by rubbing it between his hands; if it ſuffer this without breaking and is made much brighter, it may be called good, but if it be broken and made duſty by rubbing, it muſt be judged unfit for the Farmer's uſe. Of good ſeed, the quantity to be uſed, is according to the method uſed in ſowing it. In the

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* It is obſerved by ſome Farmers, that ſowing early thickens the harle or coat of the Hemp.

drill huſbandry method, (which, the experience of ſome foreign countries, a few years ſince, practiſed upon in Great-Britain, and of late, in America,has proved, to be the beſt, for raiſing of Hemp, and therefore deſerves the attention of every Farmer), one buſhel and half of ſeed to an acre is ſufficient: in the common huſbandry, not leſs than three buſhels are uſually ſowed ; and ſometimes more, according to the richneſs or poverty of the ſoil. In ſowing, great care and judgment ſhould be uſed, that it be not ſowed too *thick* nor too *thin*, by the *one*, the crop will be hurt, by its lodging, by the *other*, the bunn or ſtraw will encreaſe, and the harle or coat be too thin.

The Farmer being ſure of good ſeed, and given his ground the laſt dreſſing, and thereby laid it as fine and level, as the border of a garden ; the ſeed muſt be ſowed as carefully and regularly as poſſible, and as it is very tender, and will bear but a ſlight covering ; care muſt be taken,leſt by burying too deep,the vegitation may be prevented. Clods left unbroken with the *Harrow* and *Roller*, have the like effect upon much of the ſeed, in the common method of ſowing : Negligence in this reſpect has often ruined more than one third of aCrop; for great part of the plants will riſe irregularly, and getting bad habit in their firſt ſhooting, the produce will be ſmall.

The preparation of the ſoil in the drill way of ſowing hemp-ſeed, is the ſame, as in the common way. The ſeed muſt be planted in double rows, with ten or twelve inches partitions, and with intervals, for the paſſage of the hoe-plow, from three to four feet broad, as the ſoil may be more or leſs rich ; the richer the ſoil, the narrower may be the intervals. The ſeed muſt be planted and covered very ſhallow, and is not ſafe in general if covered deeper than about half an inch, unleſs in very light ſoils, in which it may grow at one inch depth.* This is recommended, as the method of cultivating hemp to the greateſt advantage, for it ſupplies the plant with freſh nouriſhment during their growth, and the filling the ſtalks, and the goodneſs of the coat depend much upon ſuch ſupplies, which it can't have in the common way. A plant raiſed in this method, is often worth four plants raiſed in the other. If Hemp produced in the common way, will yield the Farmer ſuch a profit as he is ſatisfied with, in the drill plow method, he may expect to grow rich.

The ſeed let into the ground by the drill is leſs in danger from birds, becauſe it is all covered; but yet may be watched to prevent their getting at it very early in the morning, and towards evening, as a loſs of much of the ſeed, would prove a great diminution of the crop.

When the Hemp is four or five inches high, let the Farmer ſend into the field careful labourers with hand hoes, to cut up weeds which may riſe in the partitions, once is ſufficient, as thereby the Hemp gathering much ſtrength, it will prevent their riſing any more. If the plants are too thick, the hoers ſhould pull up here and there a plant, but with care and ſparingly, for the working of the intervals will render the ground capable of ſupporting the two rows of Hemp with the plants cloſer than can well be imagined. When the partitions are cleared by the hand hoe, then let the horſe-hoe plow be ſet to work in the intervals, and with this let all the ground between the double rows be turned up deep and broke fine. The weeds will be deſtroyed by this, and the whole ſoil made fit to receive the roots, and nouriſhed for their ſupport. The good effect of this kind of huſbandry, is in no other reſpect ſeen more evidently. The fibres of the roots of Hemp even in the moſt favorable ſoils, do not naturally ſpread, but lie in cluſters about the baſe of the ſtock, their numbers anſwering for their ſhortneſs; but in the horſe-hoeing way, the fibres of the plants of the two oppoſite rows will meet acroſs, and fill the intervals, and the plant will flouriſh accordingly. The hoeing is to be repeated as often as the weeds appear in the large intervals. By this means the ground will be ſeveral times enriched, while the crop is growing: notwithſtanding all the expence of which to the ſoil, by the repeated hoeing of the intervals, it will attract and retain ſo much of the nitrous quality of the dews and rains, as will render it abundantly capable of producing ſeveral ſucceeding crops, though the ſoil be but of a midling goodneſs, and in the beſt natural ſoils, five or ſix, and probably more crops, all of which, (barring accidents) will be near as encouraging as the firſt. Herein the Farmer is ſuppoſed to change his partitions each ſucceeding year, into the intervals of the paſt year's crop, theſe being enriched by the hoe-plow cultivation.

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* As hemp ſeed, beginning to vegitate, ſtrikes its root downwards; if planted five inches deep, the plant is never ſeen above the ſoil, at four inches it ſhews itſelf, but in a very feeble ſtate, at three inches with ſome appearance of vigor, at two inches ſtill more vigorous, one inch often produces a tolerable plant, but a ſlighter covering better ſuits the nature of this ſeed—as has been very exactly experienced.

Of the pulling of the Hemp.

THE pulling of the Hemp is a peculiar article of its management, as there are two gatherings of this plant. The male and female, which riſe together from the ſeed, differing in the time of ripening. The Farmer will obſerve, when the male or fimble Hemp begins to turn yellow in the ſtalks, the leaves drooping and alſo growing yellow, and the bloſſom eaſily falling off, that it is ripening, and this will ſpread faſt thro' the field, as to the male plants; and is the ſignal for gathering without further obſervation: at this time the pullers ſhould be employed.

It is well known, thatHemp is pulled up as Flax, by the roots, but with this difference, that Flax is pulled up eaſily, becauſe it is all to be pulled, but only part of the Hemp; and it is not eaſy to do that, without damaging the remainder, which is the female hemp. If ſown in the moſt common method, with the greateſt caution, much miſchief is done, in trampling, breaking, and otherwiſe injuring the female plants.‡ For which reaſon, the raiſing Hemp in the drill method by double rows and proper intervals, is attended with ſingular advantage, (beſides thoſe of giving nouriſhment to the plant in its growth, and preſerving the ſtrength of the ſoil as before mentioned); for the pullers have room, to come at the male Hemp, between the rows, and to take it up without damage to the female, and alſo to lay the ſame in order to get it into bundles; wherein it is to be obſerved that the long and ſhort Hemp muſt be bundled apart, the latter wanting longer watering than the former.

The firſt pulling being over, the remainder is to ſtand till the ſeed be ripened, when the female Hemp is to be gathered. Each kind is to be bundled up as Flax, in bundles of § a ſize which may be eaſily graſped with two hands, if put into larger, it may prevent a through drying of the Hemp, in a few days, and in a warm and moiſt ſeaſon, may even raiſe a fermentation in the middle of the bundle to the great prejudice of the hemp.

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‡ See Mr. Stevens's direction upon this head, in his Letter annex'd.

§ The long female Hemp muſt be bundled a-part from the ſhort, for the ſame reaſon aſſigned for the male.

In the Hemp of the firſt gathering, the drying it in a proper manner, is much to be regarded, in order to prepare it for watering: but in the female or ſecond gathering, a principal regard muſt be had to the ſaving of the Seed. † The time for gathering the female is to be determined by the ripening of the ſeed, which will be very obvious; and when gathered and bundled, and the ripeſt and beſt ſeed beat out in the field; the bundles are to be ſet up ſome days in the ſun till dried, and then may be ſtacked, (if a large quantity,) in ſome ſheltered part of the field, unleſs in a dripping ſeaſon, in which caſe, it will be beſt to houſe them: however, a little wet, hurts not the ſtalk, tho' it may the remaining ſeed, * of which, if carefully ſaved, in addition to the firſt gathering in the field, it may be expected, that, in the common way of ſowing, an acre of good land will produce ſeven or eight buſhels, but in the horſe hoeing or drill method, ten or twelve buſhels, and ſometimes more. This makes the female Hemp more valuable than the male: and this muſt continue to be the caſe for ſome years in America, while this branch of huſbandry is growing, as the American ſeed, may be more certainly depended on, than any from Europe: and indeed every huſbandman who finds he has encouragement to encreaſe the quantity of his Hemp ſoils, will annually find a want of the greater part of his

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† See Mr. Stevens's Method of ſaving his Seed, in his Letter annex'd.

* The Farmer is adviſed to keep his ſeed firſt beat out in the field, from that he ſhall afterwards threſh out, becauſe the former is the firſt ripened, and the fulleſt ſeed, and moſt likely to be productive of the beſt plants.

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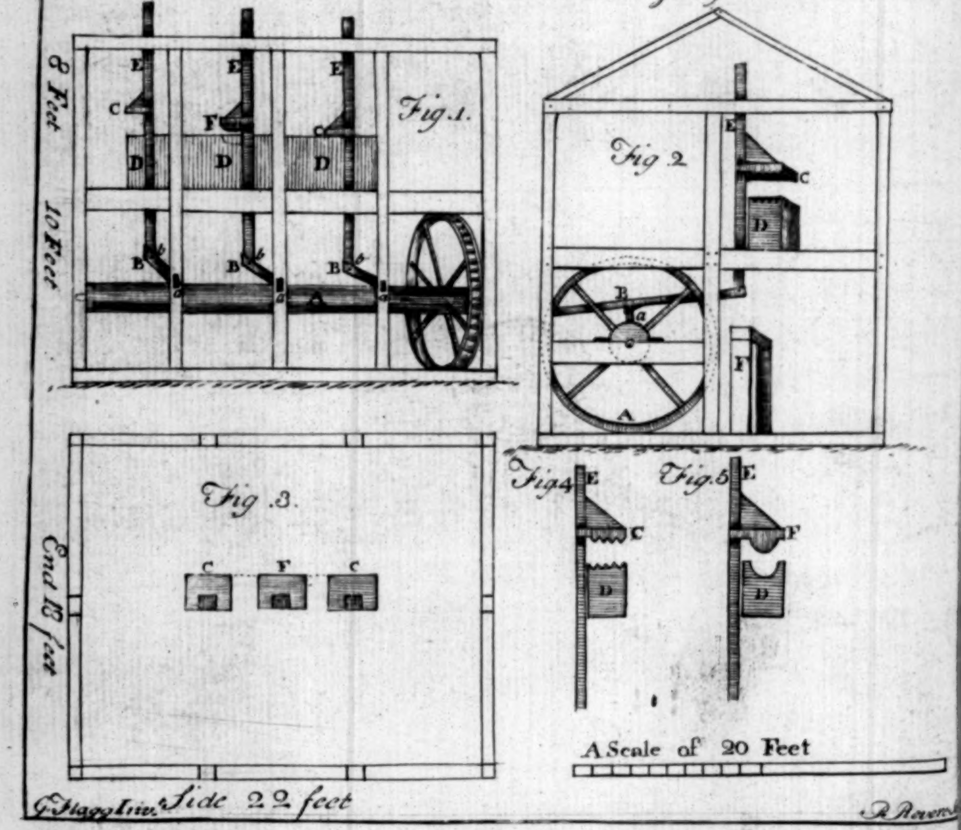
PLAN. OF A. HEMP MILL to go by WATER



G. Flagg Inv.

P. Rever

his beſt ſeed, and a general encouragement, will tend very much to encreaſe the demand for ſeed, eſpecially in a new country, abounding with ſo much ſuitable land for raiſing hemp, as theſe American colonies do; for which reaſon, the Farmer may for ſome years, almoſt aſſure himſelf, that what ſeed he can ſpare will produce him near the ſame price which he pays for the ſeed he purchaſes to begin with: this I mention as a conſiderable inducement for him to begin upon this profitable branch of huſbandry, and am perſuaded, he will ſee the obſervation to be juſt.

Of Watering Hemp.

AS to watering Hemp, it may be obſerved, that the *male*, or *fimble*, as ſoon as dryed, after gathering, and the *female*, after threſhing, are to be carried to the water. And here we muſt leave it to the Farmer's prudence to uſe ſuch watering place for rotting or rating his hemp, as he ſhall find moſt convenient. In many parts of Europe, the Farmers are forbid to water their Hemp in rivers, as it has been found to poiſon their fiſh; they generally therefore dig ponds, where a good gravel, or ſtiff clay bottom may be had, a little below the level of a run of water: in ſuch ponds they place their bundles of Hemp, under the preſſure of heavy timbers, ſtones or other weight, and fill them with water— but as moſt Farmers in America are accommodated with large rivers or brooks near them, the charge of ponds will be ſaved. After the Hemp has been under water four or five days or longer, as the weather is more or leſs warm, one of the upper bundles may be taken out, and waſhed in ſome part of the pond or river, where the water is moſt free from filth; in this waſhing it will be ſeen whether the leaves come off freely, and

the

the coat opens and eaſily ſeperates from the bunn or ſtalk ; if not, it muſt lye longer, under daily and careful obſervation, for much depends upon the duly rotting the bunn or coarſe part of the plant, ſo as to effect an eaſy parting of the harle or coat, and preſerve the ſtrength of its ſtaple. When the hemp is found to be ſufficiently watered, the bundles are to be taken out one by one, and waſhed, that all the leaves may be got off, and any filth or other matters that may by accident be got among them, may be diſcharged. This being done, the bundles are to be ſet up on the butt or root end, that the wet may drein from them : when dreined they are to be ſet up (the bands being untied and the Hemp ſpread open in caſe of a damp ſeaſon) againſt a wall or fence, or rather a ſtage erected with crotches and poles for that purpoſe, expoſed to the ſun, that they may be throughly dried, which is abſolutely neceſſary, that the bunn may eaſily brake, and the harl or ſtringy part may freely ſeperate from it.

Of brakeing Hemp.

WHEN the Hemp is well dried, it is fit for the brake, which ſhould be made firm and ſtrong, that it may duly perform its office ; the effect of this operation or dreſſing is, if well performed, a ſeperation of the harle or ſtringy part from the ſtalk or bunn, which will be very eaſy, if both be perfectly dry, and the work be done in a dry and favourable ſeaſon, which is much to be obſerved. The method of brakeing is the ſame in Hemp as in Flax, and the deſign the ſame, which is, to prepare it for further dividing : and the operation muſt not be ſlighted.

As the uſe of the common Hemp-brake is a laborious exerciſe, and conſequently the labour is a great addition to the charge of preparing the Hemp for a market, it might be a great ſaving to the Farmers, in any town or place where much Hemp may be produced, to come into the practice of Ruſſia, and other northern Hemp countries, where they have wind mills, and water mills, ſo contrived with rollers one after another, (and ſome of different conſtruction) that they can break the Hemp with ſafety, and with ſuch diſpatch, that the charge doth not exceed one ſhilling and four pence ſterling per hundred. I am likewiſe informed, there are mills of different conſtructions for this purpoſe, in uſe in Great-Britain and Ireland; and alſo in ſeveral of the colonies.—It is ſaid, that in a mill, properly conſtructed, half a ton of Hemp may be broke and cleanſed in a day.

Some foreign old countries, as well as Great-Britain and Ireland, are very careful to promote their manufactures by the help of engines, that diſpatch more buſineſs, and frequently in a better manner, than is, or can be performed by many hands; which enables them to carry their manufactures to market on lower terms than thoſe countries who are not ſo well provided.

But the want of thoſe engines in any of the colonies, need be no diſcouragement to the Farmer, from engaging in a branch of huſbandry, which under its preſent diſadvantages, is evidently profitable; and this circumſtance, we think, muſt gradually operate in the removal of every obſtruction to the encreaſe of the Farmer's encouragement, and particularly, in contriving engines to ſave the labour of many hands.

As to any further methods of cleanſing, dividing or ſoftning his Hemp, by ſwingling, pounding, or heckling it, we ſhall leave the Farmer to proceed agreable to the deſign he may have, either, of carrying his Hemp to market, or manufacturing of it, into cordage, lines, canvas, linnen or other articles whatſoever, which he will be the beſt judge of.

Since the long experience of the Britiſh and Iriſh Farmers, and of that of many foreign countries; and ſome more late experiments of Farmers in ſeveral of theſe colonies, have abundantly proved, that yard dung is by no means neceſſary in raiſing of Hemp, and that new, rich, loamy ſoils, well tilled, will even in the common method of ſowing, produce larger crops, and better Hemp, than if manured from the yard: We may hope, that by degrees, the ſtale objection againſt raiſing Hemp in ſome of the colonies in America, viz. That "*the Farmer would be obliged to apply ſo much of his yard manure to this uſe, that he could not have ſufficient left to produce corn for his family & dependants;*" this objection, I ſay, we may hope will abate, as the Farmers, one after another, ſhall experience the truth of what has been advanced; and eſpecially, as they ſhall venture into the practiſe of the drill and horſe-hoeing huſbandy, in raiſing of Hemp; and thereby be convinced of the vaſt ſupply of nouriſhment which that kind of cultivation affords, not only to the plant while growing, but likewiſe to the ſoil, preparatory for the crop of the enſuing year, and ſeveral years following, (as has been obſerved above), in caſe the Farmer doth attend to the proper intermediate tillage and cultivation, on which the expected ſucceſs depends.

Altho' it is ſaid above, that yard dung is by no means neceſſary in raiſing Hemp ; yet the Farmer is not to ſuppoſe his ſoils cannot be mended by manure of any kind. I apprehend there are ſeveral ſoils, which would ſerve to produce good crops upon different ſoils, viz. Marle, ſea ſand, earth upon earth, lime, wood aſhes, (even thoſe returned from the pot-aſh works) ſalt and freſh mud, folding of ſheep, &c; but of all theſe, the experienced Farmer gives the preference to *marle*; particularly, the writer of the appendix to the late Rev. Mr. *Eliot*'s valuable Eſſays upon agriculture) who has there obſerved, that,

" As to manures ; there is a very great variety ;
" but that which ſeems to be of the greateſt eſtimation
" by all who have wrote upon manures, is, *marle*.
" I acknowlege it gives me great ſatisfaction to find it
" in different parts of the province. I have ſeen it
" proved in light lands, and am apt to think that not
" any of the manures come nigh it. It has the repu-
" tation of laſting many years, without new additions.
" It is generally taken for weak clay, and ſo is diſre-
" garded. Since I have great reaſon to recommend it,
" I cannot excuſe myſelf from a ſhort deſcription of
" this moſt uſeful *manure*.

" It generally lies in low land, and not deep under
" the turf : To try where it is, bore in the ground
" with an auger that has a large ſhank to it, and the
" different ſoils will be brought up by it. When you
" ſuſpect that you have found it, rub it between your
" fingers under water, and if it rubs off eaſily, feels
" like greaſe and without grit, you have then one very
" good ſign; which found, dry a piece as big as a Wal-

“ nut, in the ſun or air, and when thoroughly dry, put it into a veſſel of water of the warmth of rain ; let the water cover it about half an inch, and if it bubbles like loaf ſugar and diſſolves, you then have the concluding proof of its being *marle*. It is of different colors and textures, the colors are *white*, *blue*, *reddiſh*, and *yellow* ; ſome are weak ; which are more proper for lands that are cloſer than ſand or loam ; the heavieſt is beſt for the lighteſt ſoil. It ought to lie in heaps for a year after it is dug, in order to ferment ; and then to be uſed. If put upon graſs land, it ought to be ſpread thin and buſhed, in the fall of the year. If upon tillage land, to be well ploughed in ; and it would be beſt to carry it on indian corn or potatoe land, to be well hoed in and mixed, before the land is improved for Engliſh grain. It is thought that on *grain* land, *twenty five* or *thirty* loads will laſt *fourteen* years ; they ſay that the general rule ought to be, *about ſixty loads* on an acre of tillage land, which will laſt thirty years ; and if ſo, the proportion of charge between that and dung is eaſily computed. It is alſo ſaid, that it doth not ſhow itſelf fully in the firſt year, but is conſtantly increaſing its benefit.”

To what the above writer has obſerved of this beneficial manure, I would add, that in our mother country, it is eſteemed a treaſure, by the Farmer, when he diſcovers any large body of it in his lands ; for no manure whatſoever is ſo advantageous, in caſe the nature of the marle and ſoil with which it is mixt, are ſuitable to one another.—It is judg'd by critical obſervers, that the ſoils of the river intervals owe their fertility to the fatneſs of the vaſt beds of marle lying in the borders of thoſe rivers : the riches of which is left upon the land as the waters ſubſide and gradually paſs off.

I am informed, that upon the branch of Merrimack river, which runs thro' the town of Sudbury, and ſome other places, beſides in many other parts of the country, great quantities of this kind of rich manure is of late diſcovered, (though but little uſed as yet) and in the ſaid town, and many more, they have much proper Hemp ſoil, to retain its virtue, when duly mixt: The Farmer who gives credit to what has been ſaid upon the virtue of marle, and is favoured with any quantity of it, will need no further inducement to try it on his Hemp-fields; and when found to anſwer its character, he will conclude, he has no more occaſion for his yard dung, and that he may apply his annual collection thereof to his corn, potatoe, graſs lands, &c.

As this treatiſe may fall into the hands of able Farmers, lately ſettled upon large tracts of land in diſtant parts of ſeveral of the colonies, not accommodated nor acquainted with the drill plow, but ſtill would upon the encouragement mentioned, willingly experience the production of Hemp from ſome of their ſoils, were it not that they have been told that it would exhauſt the ſtrength of their ground too much: We would endeavour to remove the objection, by obſerving to the Farmer, in the firſt place, that the neat profit of one acre of Hemp, in a new country, muſt vaſtly exceed the value of the land, ſo that he muſt be a gainer, ſhould the land be ruined by the crop: but when he is told, that the ſame acre of land will yield him an equally good crop of Hemp, the third year, in caſe he plows it up as ſoon as the crop is pulled, and croſs-plows it in about three weeks after;

and will afford it a ſummer fallowing, and twice or thrice plowing the following year: I preſume the Farmer will be inclinable to make the experiment, altho' only upon a quarter of an acre, which I heartily recommend to him; and ſincerely wiſh him ſucceſs.

Before I cloſe this collection, I am to acknowledge my obligation, for *that* of the late THOMAS HALE, Eſq; of Great-Britain, deceas'd, conſiſting of a great variety of experimental inſtructions in agriculture, many of which, with variations adapted to our different climate and other circumſtances, I have given the Farmer: And I muſt likewiſe ſubjoin the copies of two letters, which I received from perſons, who have, (I believe with an eye to the benefit of their country, as well as their own) made ſome very uſeful experiments in the Hemp huſbandry, which, of themſelves, may afford the Farmer ſufficient encouragement to engage in the cultivation of ſo uſeful and profitable a branch.

Being informed, that Meſſieurs *Joſeph Blaney* and *Samuel Barton*, of *Salem*, had been ſucceſsful in raiſing of Hemp in the horſe-hoeing method, I wrote them upon the ſubject, and deſired their anſwer to a Number of Queries, which I ſuppoſed might afford encouragement to ſuch Farmers, who ſhould, the enſuing year, incline to engage in the ſaid method of raiſing Hemp; the ſucceſs of my deſign will be obvious in their anſwer.

SIR, *Salem, January* 28, 1765.

"THE raiſing of Hemp within this province, is a matter of ſuch conſequence, as to demand the attention of every one that has the real intereſt of the province at heart, eſpecially at this time, when our trade is ſo much diſcouraged.—

One hundred acres of good land for each town within the province, would be ſufficient to raiſe ſuch a quantity of it, as would when dreſſed, be equal, if not ſuperior in value to the Fiſheries within the Province.----What then would be the value of it when converted into canvas, cordage, &c ? And what numbers of the induſtrious poor would it employ ? Surprizing ! that no proper meaſures have been taken to introduce ſo uſeful, ſo profitable a branch of buſineſs----

We are much pleaſed to find you making inquiry into the culture of ſo valuable a plant : and ſhall, agreable to your requeſt, give an anſwer to ſome of your Queries, from the experience of one year.

Being ſenſible that we could take no better method to promote this branch of huſbandry,than by going into the practical part thereof ourſelves ; we accordingly laſt ſpring ſowed ten acres of land with hempſeed, nine in the drill method, and one in the common way.---

The land we made uſe of in the drill method was in general very indifferent, and had, except half an acre of new land, borne ſeveral crops, immediately before ; the greateſt part more than three crops : but by the force of tillage the hemp grew to a good heighth, from four to ſeven feet.---The half acre of new land,we broke up early in the ſpring with a four coultered plow ; but finding we could not bring it into it ſuch a degree of tilth by the twenty-ſecond of *May* as to ridge it, were obliged to ſow it on a level : We ſowed it in rows, and had a good crop of hemp.---

We made uſe of no manure for any land, but are of opinion that proper manure would have been of

ſervice ;

ſervice; for hemp is a plant of quick growth, and requires a great deal of nouriſhment in a ſhort time.

We made uſe of five feet ridges, two rows on each ridge of ten inches in the partitions, and found the intervals and partitions to anſwer very well.---

We ſowed near a buſhel of ſeed upon an acre, in the drill way, and two and an half buſhels in the common way; but think if the land be good that one and half buſhel in the former, and three buſhels in the latter method, would be better.---

We ſowed our land at different times, viz. *April* 14th, 18th, *May* 7th, 14th, 22d, 28th, thence conclude that the beſt time for ſowing hemp, is as early in the ſpring as the land can be well prepared; & that any time before the middle of *May* will do.---

The quantity of hemp in the common way if the land be good and well dreſſed, will be about one third more the firſt year than the drill way.--- If the land be indifferent the quantities will be near equal, ---If the land be poor, the greateſt quantity will be in the drill way.---

We chooſe the drill method being the moſt certain, producing the beſt ſtalks, exhauſting the land the leaſt, and in the end we believe, the moſt profitable.---

But the common method for a new country we think the beſt, it requiring leſs labour, and land being plenty and cheap.

From the beſt of our land in, the drill method, we had at the rate of ſeven hundred weight to an acre; and from the beſt of that piece ſowed in the common way at the rate of ten hundred weight; part of a piece ſowed in the common way being wet and cold, the hemp was very indifferent.---

We ſowed nine ſeperate pieces of various ſoils; thence found that the beſt ſoils that we had for hemp were a *rich ſandy loam*, and a *deep dry black mould*; and that cold, clay, wet, and gravelly lands are the moſt improper.---

In order to experiment the different growth of hemp ſown in the drill method, and by hand without further cultivation of the ſoil, we ſowed a ſmall ſtrip of the ſame ground in the latter method, which was ſowed in the other; the effect was, that none of the plants in the ſmall ſtrip roſe higher than about one and a half feet; whereas thoſe cultivated by the plough reached to four and an half, and five feet in heighth.---

We would obſerve *caeteris paribus*, that the more tillage we gave our land, the greater was the quantity of hemp:--That rich heavy land did not produce ſo much as indifferent land well till'd:---That new land produced more than land that had borne ſeveral crops.---That it is very eſſential for hemp, that land be brought to a great degree of fineneſs by tillage, or proper manure and tillage jointly:---That new land ſhould be broke up the ſummer or fall before.---

We would alſo obſerve, That hemp bears a drought as well or better than Indian Corn; and is not ſo liable to be cut off by an early froſt.---And that there is no more difficulty in the culture of it, than of flax.

We have already been ſufficiently tedious, therefore ſhall conclude with regard.

Sir,

Your moſt humble Servants,

Joſeph Blaney,
Samuel Barton, jun.

I

I communicated the above letter to Mr. *John Stevens*, of *Aſhford*, then in town, and ſome other experienced judges of the contents, who joined in opinion, of the propriety and uſefulneſs of the experiments and obſervations contained therein, and of the advantage which might reſult from its being made publick. Some time after which, Mr. *Stevens* writes the following letter, which is ſufficiently recommended to the publick, by the additional light he has thrown upon the ſubject.

BOSTON, Feb. 2. 1765.

Sir,

I Have carefully peruſed the treatiſe you ſent me, and alſo Meſſir's *Blaney* and *Barton* their letters giving an account of the experiments and obſervations which they have made, on the hemp-huſbandry; and am of opinion, that the whole affords ſuch a collection of inſtructions upon the important ſubject, as may if made publick, have a tendency to enlighten and encourage the farmers in all theſe colonies, to engage in the production, of this profitable material, as faſt and as far as they may be able to procure good ſeed for the purpoſe.

The treatiſe and letter having ſuperſeded the moſt of what I might have ſent you upon the ſubject, I ſhall only furniſh you with a few experimental obſervations relative thereto, which may poſſibly prove ſome addition to the improvement of ſo uſeful a branch of huſbandry.

As for ſome years to come the farmers attempt in this branch will be moſtly in the common method of ſowing the ſeed by hand, without any regular diviſions: I would adviſe them, as I have practiſed myſelf, when the male hemp is ripe, to ſet their pullers, to pull up the hemp as it ſtands male and female together,(in ſix feet diviſions) from ſide to ſide of the field, the breadth of a man's body, or about two feet and an half, and to carry the hemp in bundles out of the field to bind and ſet them up to dry, which being done, the pullers may then be ſet to pull up the male hemp of each diviſion, and carry it alſo in bundles out of the field, which when bound, are to be ſet up to dry; and this is performed by the advantage of the paſſages before made, without trampling upon or bruiſing the female plants, which are to remain in the field to grow ſome weeks longer until the ſeed be ripened; and by this ſeparation a freer air and freſh nouriſhment is given to thoſe remaining plants, which evidently quickens their future growth and maturity.

The ſeed of the female hemp, being at preſent & likely to continue ſome years in very great demand, I would further caution the farmer if he would ſave the moſt and beſt of his ſeed; when his hemp is ripe, (which is obſervable by the pods and clefts, (wherein the ſeed is lodg'd,) beginning to open themſelves ſo wide, that ſome part of it is ready to drop upon a light ſhaking) that he ſet his pullers to pull his hemp in a dry day, and lay it in proper bundles, with as much care as poſſible; and at the ſame time to have two perſons to follow the pullers with a ſheet or other ſtrong large linen cloath, and therein give the bundles one after another a light beating, which will ſecure the principal and firſt ripened ſeed; after which the hemp is to be bound up and carried to the ſtages for drying, under cover if poſſible, from the alternate dews and ſun: After being well dryed they are to be carefully threſhed, in order to get out the remaining ſeed, in the barn or ſome convenient place. This being done, the bundles are to be put into the water, in order to rate or rot the hemp as uſually directed: When this is effected, the bundles are to be taken out, and either ſtack't or houſed, if can be conveniently done, otherwiſe if left abroad the whole winter, the bundles reſting upon ſtages made of ſtrong poles and crotches; the hemp will not receive any damage thereby, but rather become the better prepared for further management.

The farmer muſt be very careful in ſaving his ſeed, which by no means ſhould lye too thick upon his floor, leaſt it heat and thereby be ſpoiled; to prevent which, let him ſtir and turn it frequently 'till it be dryed.

As I have ſaid above that the bundles of hemp ſhould be ſet, if poſſible under cover from the ſun and dews, while drying, in order for watering, I would add, that the ſtaple of a great part of a crop of hemp is rendred weak, by the farmers frequently ſuffering their hemp to ſtand ſome weeks after pulling in the dews and ſun, in order to drying and then put into water, by which means the outſide of each bundle being partly rotted already, is become when taken out of the water, over rotted, and goes very much to tow in the ſubſequent dreſſing, and of courſe ſome cheap defenſe when drying, will prove a great ſaving to the farmer, and much beyond the charge of the propoſed covering.

I have by the cultivation of the hoe plow produced ſeven hundred of hemp, and eight buſhels of ſeed from ſuch an acre of land, as the preceeding year by the help of manure, yielded but about ſeventeen buſhels of Indian corn, with the advantage of a good ſeaſon.

My experience of the advantage of this method of cultivating the earth, has convinced me, as well as my neighbours at *Aſhford,* that it ought to have much the preference in raiſing of hemp, in old towns where land is ſcarce, if not where its more plenty. I have ſowed hemp upon a ſmall part of an acre of ground in the common method; the reſt I have ſowed in the drill way, the whole acre being equally good and equally ly cultivated: Upon the former part the plants did not riſe higher than two feet, upon the latter they reached five feet and upwards.

I heartily wiſh the growth of good huſbandry throughout theſe colonies, and that of hemp more eſpecially, and am,

Sir, Your Friend and Servant,

John Stevens.

APPENDIX.

SINCE the preceeding treatiſe was ready for the preſs, I have procured the model of a mill, for brakeing and beating of hemp, the plan of which with the explanation is annext, at the deſire of the committee of the honorable houſe of Repreſentatives.

Upon this plan, I am informed, a mill is conſtructing at *Salem*, for the uſe of that town and neighbourhood: the uſefulneſs of it will be determined, by the degree of labour, it may ſave the farmer, in the abovementioned ~~obſervations~~. Operations

In the preceding inſtructions upon the production and management of hemp, and by the annexed plan, I have for the public benefit, endeavoured to diffuſe the beſt light I could collect upon the ſubject:—Should any artitle of importance be omitted, or any thing be inſerted, which by experienced farmers, may be judged to have a tendency to miſlead others; or ſhould ſuch farmers make any future diſcoveries, in the cultivation and improvement of this beneficial branch of huſbandry; a communication thereof will manifeſt a concern for the intereſt of the publick, and perfectly quadrate with the principal view I had in the preſent collection, and may eſpecially ſerve to promote the wiſe and good intention of the *Britiſh* legiſlature, in an Act, which was made the laſt year, and took place from the 24th of *June* laſt, " whereby was granted a " bounty of *eight Pounds* Sterling, for every ton of *water* " *rotted, bright and clean hemp,* and for every ton of rough

" and undreſſed flax, which ſhould be legally imported from
" his majeſty's colonies into *Great-Britain*, from the ſaid 24th
" day of *June* laſt, to the 24th day of *June* 1771, and a further
" bounty of *ſix Pounds* ſterling for every ton of ſuch
" hemp and flax ſo imported, from the 24th day of *June*
" 1771, to the 24th day of *June* 1778: and alſo a further
" bounty of *four Pounds*, for every ton of ſuch hemp and
" flax, imported from the 24th day of *June* 1778, to the 24th
" day of *June* 1785."

As the *laſt period* of theſe bounties, is ſet at the diſtance of *twenty-one Years*, it is expected, that this circumſtance, with the *large* bounty of the *firſt period*, will have a ſingular tendency, to encreaſe the production of theſe important materials, in all the *Britiſh* colonies; and very ſoon to render their mother country independant upon *certain northern powers*, upon whom her *former* dependance, for a ſupply of *naval ſtores*, has been frequently very *precarious*, and a *future* may be *unſafe*; but we may hope, that in a few years, it will be *unneceſſary*; as a ſufficient quantity may be derived from *theſe colonies*, with great and reciprocal advantage, ariſing from the conſequent increaſe of the *navigation* of *Great-Britain*, and of her commerce with her colonies, and her exchange of a *leſs*, for a *more* profitable branch of trade.

Having given the public an extract from the aforementioned act of parliament, I find myſelf obliged to *apologize* for a militation (which I hope the reader will excuſe) in what I have ſaid in the fourth page of the preceding treatiſe, and my information of the ſeveral bounties, granted by the ſaid act; this being taken from a copy of the whole act, printed in a *South-Carolina Gazette*, which came to my hand, ſince ſome hundred copies of the firſt ſheet were ſtruck off: before which I was ſo unhappy, as by a public *Boſton Paper*, to be partially adviſed of a bounty only granted upon *hemp*; and *that* occaſioned my ſaying, that the grant of a bounty, upon application to parliament, might be expected, as well *upon flax as hemp*: However, I have the pleaſure to find my preſumption was well grounded.

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EXPLANATION of the PLAN.

FIGURE 1. *Repreſents a ſide-view of the Building.*
A. *the Shaft and Water Mill.*

BBB. *the three Levers over the Shaft, one End faſtned to the Frame by a Joint at* a: *the other faſtened to the lower Part of the upright Sweep, by another Joint at* b.

CC. *The two Brakes, faſtned to the upright Sweeps, with Knees.*

DDD. *The Box or Block, for the Female Brakes to be fixt in; if a Box, to be made of 6-Inch Plank.*

EEE. *The three upright Sweeps, with the Brakes and Beater framed and braced.*

F. *The Beater to ſoften the Hemp.*

Figure 2, *Repreſents the End View.*

A. *The Water Wheel, and the End of the Shaft with the Coggs at* a, *to raiſe the Levers.*

B. *The Lever over the Shaft.*

F. *The Poſt and Summer to ſupport the Levers when down.*

D. *The End of the Box.*

C. *The Brake framed to the upright Sweep.*

Figure 3 *repreſents the Chamber Floor, with Box, Brakes, and Beater in their Place.*

CC. *The Brakes.*

F. *The Beater.*

Figure 4 *repreſents one of the upright Sweeps.*

EC. *The Male Brake.*

D. *The End of the Box with the Female Brake.*

Figure 5 *repreſents the Middle Brake or Beater.*

E. *The upright Sweep.* F. *The Beater, fram'd to it.*

D. *The Mortar in the Middle of the Box.*

The Scale of this Plan is adjuſted at $\frac{1}{10}$ *of an Inch to a Foot.*

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